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ABSTRACT

Many essayists on writing believe that a student's level of cognitive development determines the organization of thought expressed by the student's writing and that an individual cannot use language at a level that goes beyond his or her stage of cognitive development. Without the maturation of formal operational structures, students cannot easily take a view contrary to their own positions (decentering), so that unless writing activities relate to the students' own perceptions of the world, assignments will be misdirected. Activities that encourage students to make inferences also require the full development of formal-operational structures. Only at this level can a student make a real synthesis--recognizing that an opposing position has genuine validities that can provide multiple perspectives on an issue. An exercise used at Memphis State University (Tennessee) helps students synthesize. Two fund-raising letters are examined in which the intended audiences are analyzed, the logical and persuasive fallacies are explored, and the rhetorical strategies employed by the writers are determined. Students then write an essay on one of the letters in which they assume the role of the recipient, describing that recipient's possible reaction to the letter, and comparing that response to the response the letter's author intended to elicit in the target audience. Such assignments help encourage students to perform successfully at the developmental level they have reached, as does teaching writing with the workshop method and with the "one-on-one" method of peer and professional conferences. (Notes and references are included.) (NKA)

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Misdirections in the Relation Between Writing and Cognitive Development

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Misdirections in the Relation Between Writing and Cognitive Development

In our attempts to understand student writers, we have frequently turned to related disciplines for whatever insights we can gain. Since we deal with mind and thought, many of us have found studies in cognitive development to be particularly informative. In fact, the relation between writing and cognitive psychology has recently become a fad among a number of essayists. These writers seek to understand students' failures and successes by examining the theories and conclusions of developmental and cognitive psychology. Susan Miller ("Rhetorical Maturity: Definition and Development"), for example, appeals to Lawrence Kohlberg's model of cognitive/moral stages to explain the inability of students "to invent and write persuasively from a highly relativistic rhetorical stance (124). Gene Krupa ("Perry's Model of Development and the Teaching of Freshman Writing") finds that William Perry's scheme of intellectual development during the college years helps him to understand that some freshmen "can't do the kind of writing I want or even understand what I want until they have radically changed their view of the world" (19). Kenneth Dowst ("Cognition and Composition"), appealing to Vygotsky, Luria, and Piaget, says that if we apply their views to writing we would "focus on the structure of knowledge and understanding that a given composition establishes, the sort of sense it makes of the writer's and reader's world, [and] the usefulness of the composition as a guide to action" (12). Gary Sloan ("Formal Logic in the Composition Course") argues that both skilled and unskilled writers "need to know what constitutes valid reasoning" (18). Karl K. Taylor ("The Development of Chronological Thinking Skills and

Their Relationship to Writing") notes that "the gap between writing simple chronological narratives and relatively complicated expository prose may be too large for many students to bridge" (15). Finally, Patricia Bizzell ("What Happens When Basic Writers Come to College?") describes the basic writer's problem not only as a clash of dialects and discourse forms, but also as "a clash of ways of thinking" (294-96).[1]

In assessing the relation of cognitive development to writing, John Clifford ("Cognitive Psychology and Writing: A Critique") distinguishes between one group concerned with thought and mind and a second group who describe objective models of mental behavior (16). The first group--those who stress thought and mind--include such writers as Lev Vygotsky, Alesandr Luria, Jean Piaget, and Jerome Bruner. Their work gives us insight into concept formation, inner speech, decentering, and meaning-centered approaches to learning. The second group emphasize an objective description of cognitive behavior and divide into two sub-groups: one uses an information processing model to try to chart the mental processes of writers (Linda Flower and John Hayes, for example, focus on the various mental operations performed by writers in the act of composing); a second sub-group calls upon the work of cognitive pyschologists to help explain the problems students have with writing. The writers of these essays see cognitive development as a sequence of stages from less complex to more complex mental structures, basing their pedagogical techniques on the theory that all persons universally proceed through the same stages and the same order of mental development. It is this second sub-group of scholars that I focus on in this article. In these writers, two assumptions inform their discussions of the relation between writing and cognitive developmental stages:

1. A student's level of cognitive development determines the organization of thought expressed by the student's writing;
2. An individual student cannot use language at a level that goes beyond the student's level of cognitive development.

Based on these two assumptions, I conclude that we cannot devise a writing pedagogy that will work equally well with all learners.

Studies in cognitive development cannot lead us to a complete writing pedagogy, but developmental schema may help us immensely in the difficult, frustrating task of teaching writing by alerting us to the realities of our students' cognitive development. If we ignore the evidence of developmental psychology, we run the risk of frustrating our students, or worse, of creating the illusion in our own minds that our latest pedagogical insight really does produce better writers. In spite of the categorical rejection of cognitive research by Ann E. Berthoff in "The Intelligent Eye and the Thinking Hand," I have the temerity to suggest that developmental schema can provide significant insight into some writing problems of our students. So I want, in fact, to take the developmental psychologists, and those who employ their insights, on their own grounds, that is, that the maturation and organization of thought determine the level of writing; and, further, I want to examine some apparent contradictions in the discussion of the relation between writing and cognitive development. While the suggestions in a number of the articles that discuss writing and cognitive development are right on target, a number of misdirections emerge when we compare the instructional strategies that these writers suggest with the premises with which they begin. In the following discussion, I employ the terminology

coined by Jean Piaget, but the points I make apply equally to other developmental schema.[2]

Every published statistic about the cognitive development of college students indicates that significant numbers still function at the concrete-operational level and that many others are in the transition stage between what Piaget calls concrete and formal operational levels. Joe W. McKinnon, for example, reports that "about 50% of students entering college cannot cope with abstract propositions" and that "this figure does not differ appreciably from college to college" (111). In one study of students at Memphis State University (Memphis, Tennessee), the students fell into two large groups, one at the concrete-operational level and another at the transition stage between concrete- and formal-operational levels (Rainey 4). Consequently, any pedagogy of writing that employs developmental schema must take into account these differences among students.

According to developmental schema, decentering--the ability to see an issue from outside oneself--characterizes Piaget's formal operational stage. Following Lunsford's article "Aristotelian Rhetoric: Let's Get Back to the Classics," Sally Harrold ("Ethics, the Basic Writer, and Classical Rhetoric") suggests an activity using the classical exercises of controversiae and prosopopoeia (10). Such activities require students to argue both sides of a controversial issue. Without the maturation of formal operational structures, however, students cannot so easily take a view contrary to their own position. Confronted with this claim, some argue that Margaret Donaldson shows that Piaget interprets the situation incorrectly. That is not quite the case. Although Donaldson (A Study of Children's Thinking) demonstrates that students

are not nearly so egocentric as Piaget thought, her work does not invalidate the overall structure of Piaget's developmental theory. In spite of the modifications suggested by Donaldson, Piaget's basic premise that all people develop through the same stages in the same sequence remains intact. Donaldson's work, however, shows that students may develop cognitive structures at quite an earlier age than Piaget finds.[3] What Margaret Donaldson teaches us is that students can "decenter" if the task 1) is put to them in terms that make sense in their own worlds, and 2) has a meaningful purpose in terms of their own worlds.

Consequently, with assignments that require students to get outside themselves and to view a topic from another perspective (that is, to decenter), we misdirect our efforts unless the activities relate to the students' own perceptions of the world and have meaningful purposes from those perspectives. Whether the activities suggested by Harrold and Lunsford relate to the world views and the purposes of students must be determined in each composition class and, I believe, on an individual basis with each student, simply because in reading cognitive developmental studies I conclude that we must modify both instruction and evaluation in order to meet the unique learning style of each student (Graham 49).

Another characteristic in Piaget's developmental system--the ability to infer conclusions from general data--requires the full development of formal-operational structures. Writing from a developmental perspective, some writers suggest activities to encourge students to make inferences. As an extension of the activity with <u>controversiae</u>, for example, Harrold, again following Lunsford, suggests that students pose

as famous persons in order to write what those figures might have said in specific historical circumstances (10). Prosopopoeia requires students to infer from actions and statements of the famous people what principles would guide their statements about, for example, a particular ethical issue. When students operating at the concrete level are asked to assume the voice of a historical figure and compose what the person might have said, the student often judges what the famous person would say by what the student believes. For example, a student who selected the writing of the "Star-Spangled Banner," presented a well-written composition using significant details of the event. The essay, however, represents the student's own patriotic stance towards the American flag and the National Anthem, a genuine response, but not one that represents what Francis Scott Key might have said.

Students, of course, need to see that common principles may generate quite different conclusions, but students operating at the concrete-operational level have not developed this meaningful skill, nor will they change their opinions, which still are governed by dichotomous thought processes. They think only in terms of right/wrong or good/bad. Dichotomous thinking characterizes earlier moral development, for instance, in Kohlberg's scheme. This kind of thinking also characterizes Conceptual Level, a cognitive learning style that I have used in research.[4] Parallel to, and partially derived from, Piagetian concepts of mental development, CL measures conceptual organization on a scale from concrete to abstract and examines a person's need for different methods of learning as well as the maturity of a student's relationship to others. Generally, CL scores express the student's need for structure in the learning environment, with the lowest category of

students requiring the most structure and the highest category requiring the least structure. The degree of structure in the learning environment is determined by the degree of teacher/student responsibility, variation in the specificity of instructions, and the degree of pre-organization of material. Highly structured environments 1) are teacher-centered, 2) involve pre-organized material, and 3) involve specific instructions and expectations. Students at the lower end of the CL scores are characterized by dichotomous thought processes (i.e., right/wrong; good/bad).

Students at the concrete, earlier stages of development, not only think dichotomously, but they have not developed the skill of synthesis, which requires assimilation of several points of view. John C. Bean ("Summary Writing: Rogerian Listening and Dialectic Thinking)" describes a writing situation focusing on the decentering problem in student's writing. Bean sees a systematic program of summary writing as a particularly effective way for students to overcome egocentrism. He proposes assignments that encourage students to articulate an opposing perspective, then to formulate an antithetical position, and, finally, to compose a synthetic compromise.

One assignment that I have used reveals the difficulties that students have with this kind of assignment. I ask students to consider the differences in narrative point of view, detail, and organization in two versions of the death of Mary Queen of Scots, one by the nineteenth-century historian James Anthony Froude and the other by the twentieth-century biographer Antonia Fraser. After several class discussions and journal writings in which I lead the students to focus on the relevant differences, I ask the students to write an essay

examining the extent to which authorial intention determines the way writers select and order their material. The students do, indeed, see that the two versions are quite different, even contradictory. But students at the concrete-operational level inevitably decide that one of the two accounts must be incorrect. Only students at the formal-operational level understand that the differences between the two accounts emerge from different authorial intentions. Understanding multiple perspectives requires, in the Piagetian scheme, the full development of the mental structures of reversibility, and these structures characterize formal operations. Consequently, only students who have developed capacities that enable them to see how one set of data might be directed toward different conclusions are capable of understanding diverse authorial intentions.

The student at the concrete-operational level, however, cannot decenter so readily. Usually, the concrete-operational students may recognize an opposing position, but they conclude that everyone has a right to an individual opinion. According the Conceptual Level learning style, students at the concrete-operational stage will say that everyone has a right to be wrong. On the other hand, students in transition between the concrete- and formal-operational stages, will likely assert that everyone has a right to an individual opinion, but they will claim that their opinions are better. Only at the formal-operational level can a student make a real synthesis, for only at this stage can a student see that an opposing position has genuine validities which provide multiple perspectives on an issue. Anyone who uses an assignment requiring the assimilation of multiple viewpoints will see a mixture of failures and successes as students at different developmental

levels seek to fullfill the task. Again, students are different because their perspectives on the information varies according to their developmental level.

In order to get students to focus on multiple perspectives, I use two fund raising letters--one from Leadership Roundtable soliciting money to get the Supreme Court decision on prayer in the schools overturned; and one from the National Organization of Women seeking money to combat the threat to overturn the Supreme Court decision on abortion. I tell the students that the actual recipient of the letters (me) is a professional with a college education who respects logical evidence and legitimate persuasive strategies and is generally to the left of Ronald Reagan in the political spectrum. Further, I inform the students that I was disappointed, if not outraged by the strategies of the two letters--disappointed that the writers would assume that their persuasive and logical fallacies would induce me to join the organizations and outraged that the organizations would demean themselves by trying to subvert my intellectual integrity. After identifying the actual fund-raising purposes of the letters, I lead the students in an analysis of the intended audiences of the letter writers (using Karl Wallace's topoi of the audience in "Topoi and the Problem of Invention"); second, in an examination of the logical and persuasive fallacies of the letters; and, finally, in an analysis of the rhetorical strategies employed by the writers. Then I ask the students to choose one letter and to write an essay explaining why I was infuriated by it. To fulfill this assignment, the students must assume my role, i.e., they must describe how I might react to the letter. And they must compare my

response to the response that the author of the letter intended to elicit in her target audience.

I wondered for a while why the assignment failed, only in the end to discover that most freshmen cannot effectively play the role of another reader. When I revised the assignment and asked them to write an essay explaining their own reactions to one of the letters, many more students succeeded.[5] If, in fact, most of our students do not function at the formal level, they will have difficulty taking a perspective outside themselves and they will not infer general principles from data that does not provide its own contextual clues or from information to which students cannot personally relate. What we must do, of course, is to allow those students at the formal-operational stage to write essays that employ the full range of their mental structures, for such students can effectively play the role of another reader. On the other hand, we should not expect students at the concrete-operational stage to succeed in this task. In short, we must devise writing opportunities that encourage students to perform successfully at the developmental level which they have reached. We should not, of course, penalize students operating at a different developmental level than the one we hope they have reached--either by giving them assignments that frustrate them (and us) or by assigning lower grades to the students writing at the concrete-operational level.

The activities that I have just described have a worthy objective. To use Harrold's words, "such instruction offers a way of engaging the students and fostering their multi-dimensional growth" (9). In our efforts to help students explore values and issues and to become better writers, however, we must assure ourselves that our instructions

actually foster that growth and do not frustrate it. To expect formal reasoning from students at the concrete-operational stage may do far more damage than allowing them to write effectively, if with less maturity. Not to allow for these differences in cognitive levels may confuse and frustrate students because they cannot assimilate multiple perspectives.

When students consider the demands of general questions and divergent audiences, my research shows that their responses are conventional, derivative, and unengaged. Students at the concrete-operational level (or Vygotsky's "thinking in complexes" level) do, indeed, include the results of brainstorming sessions in their writing, but seldom come to these insights on their own, and the conclusions reached do not last much longer than it takes them to forget the assignment. When students work together to infer general principles, those at the concrete-operational level simply mimic the group consensus.

Paula Tremblay in "Writing Assignments for Cognitive Development" provides two "discovery exercises," in an attempt to "help students make the transition from concrete to formal operations" (342). According to Piaget, instruction can help students make the transition from concrete to formal operations only by providing the environment in which the transistion can occur. The two assignments suggested by Tremblay seem to provide that environment. But the likely result is that a concrete-operational student will provide only derivative syntheses of the experiences without the idea flowing coherently from detail to analysis to synthesis.

Looking at student writing from the perspective of developmental theory can inform us significantly in how to deal with the disparities

that all of us recognize among our students. Yet the essential caveat is that we must approache our students in terms of the meaningful purposes that arise from their own views of the world. And we must be certain that our pedagogy suits the developmental levels and learning styles of the students we seek to teach. Piaget sees linguistic or educational transmission as a fundamentally important aspect of development, and many of the writers surveyed here recognize the importance of providing an environment in which students can acquire social confidence and share in activities. In these environments, students experience equilibration (consolidation of developmental structures); or else they experience disequilibration in which they discover that they cannot account for phenomena with the mental structures that they presently have and seek to explain the phenomena in new ways. At this point, according to Piaget, new cognitive structures come into being (see "Development and Learning" 13-14).

Piaget, toward the end of his career, noted that "learning is possible if you base the more complex structure on simpler structures, that is, when there is a natural relationship and development of structures and not simply an external reinforcement ("Development and Learning" 17). When confronted with the claim that some investigators have succeeded in teaching operations, Piaget says that he wants three questions answered before he assents:

1. Is this learning lasting? What remains two weeks or a month later? . . . When you achieve the learning by external reinforcement, is the result lasting or not and what are the conditions necessary for it to be lasting?

2. How much generalization is possible? . . . When you have brought about some learning, you can always ask whether this is an isolated piece in the midst of the child's mental life, or if it is really a dynamic structure which can lead to generalizations.
3. In the case of each learning experience what was the operational level of the subject before the experience and what more complex structures has this learning succeeded in achieving? In other words, we must look at each specific learning experience from the point of view of the spontaneous operations which were present at the outset and the operational level which has been achieved after the learning experience. ("Development and Learning" 17-18)

The differences in the cognitive development of students demands that we differentiate our instruction of writing to the particular developmental levels of individual students. We certainly can compose assignments that "march ahead of development and lead it," but we must be careful not to lead from too great a distance. What this differentiated instruction requires from us is extensive patience and careful consideration of individual differences among our students. The solution, it appears to me, lies in the course of action already adopted by many instructors: teaching writing by the workshop method and by the "one-on-one" method of peer and professional conferences. As Lunsford has said, composition classes should focus on the activities of writing, reading the student's writing, and talking about the student's writing ("Cognitive Development" 41). Further, we must take into account the different levels of development that confront us in any single class.

Any instructor learns in a short time that no two students function at the same level of development in writing. We need to remember, also, that no two students are at the same level of cognitive development. These variations in cogitive development require differences in the instruction that students receive, in the assignments that they write, and in the evaluation that we give of their writing. To differentiate instruction and evaluation, of course, poses complex questions of instructional management, but unless we solve these problems, we may continue to misdirect our efforts when we apply studies in cognitive development to writing instruction.

Notes

[1]I omit Linda Flower and John Hayes from this list because their view of cognition and writing is not essentially developmental in the Piagetian sense; similarly, I do not include John Bereiter and Marlene Scardmalia, although their work reveals some developmental characteristics.

[2]I follow Piaget in the work he wrote with Barbel Inhelder, The Growth of Logical Thinking from Childhood to Adolescence. (New York: Basic, 1958). For a thorough and readable discussion of Piaget, see Charles J. Brainerd, Piaget's Theory of Intelligence (Englewood Cliffs: Prentice, 1978). Margaret Donaldson provides an outline of Piaget's thought in the appendix to Children's Minds (New York: Norton, 1978).

[3]Surprisingly, none of the articles that I have seen mentions Margaret Donaldson, whose studies suggest major modifications in Piaget's theory of cognitive development. This neglect results, probably, from the fact that Donaldson concentrates on students much younger than those most of us teach. Piaget, in an article late in his life, anticipated the results of Donaldson's study. Piaget writes: "Different children also vary in terms of the areas of functioning to which they apply formal operations, according to their aptitudes and their professional specializations. Thus, although formal operations are logically independent of the reality content to which they are applied, it is best to test the young person in a field which is relevant to his career and interests" ("Intellectual Evolution from Adolescence to Adulthood" 1).

[4]See David E. Hunt, et al. Assessing Conceptual Level by the Paragraph Completion Method. Toronto: Ontario Institute, 1978.

[5]Susan Miller found a similar problem when she asked her students to write a persuasive essay on euthanasia for a generalized universal audience. When she revised the assignment so that the audience was more immediate and the topic more personally relevant, the students wrote more effective persuasive essays ("Rhetorical Maturity: Definition and Development" 121).

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